

LOAD AND RESISTANCE FACTOR RATING (LRFR) SUMMARY FOR REINFORCED CONCRETE BOX CULVERTS

LEVEL	VEHICLE	WEIGHT (W) (TONS)	CONTROLLING LOAD RATING #	MINIMUM RATING FACTORS (RF)	TONS = W x RF	STRENGTH I LIMIT STATE								COMMENT NUMBER		
						MOMENT				SHEAR						
						LIVE-LOAD FACTORS (LL)	RATING FACTOR	BOX NO.	ELEMENT TYPE	DISTANCE FROM LEFT END OF ELEMENT (ft)	RATING FACTOR	BOX NO.	ELEMENT TYPE		DISTANCE FROM LEFT END OF ELEMENT (ft)	
DESIGN LOAD RATING	HL-93 (INVENTORY)	N/A	①	1.03	--	1.75	1.36	1	BOTTOM SLAB	8.02	1.03	1	BOTTOM SLAB	7.79		
	HL-93 (OPERATING)	N/A		1.34	--	1.35	1.77	1	BOTTOM SLAB	8.02	1.34	1	BOTTOM SLAB	7.79		
	HS-20 (INVENTORY)	36.000	②	1.03	37.12	1.75	1.36	1	BOTTOM SLAB	8.02	1.03	1	BOTTOM SLAB	7.79		
	HS-20 (OPERATING)	36.000		1.34	48.11	1.35	1.77	1	BOTTOM SLAB	8.02	1.34	1	BOTTOM SLAB	7.79		
LEGAL LOAD RATING	SINGLE VEHICLE (SV)	SNSH	13.500		2.16	29.15	1.40	2.88	1	TOP SLAB	3.68	2.16	1	TOP SLAB	7.53	
		SNGARBS2	20.000		2.02	40.48	1.40	2.68	1	BOTTOM SLAB	8.02	2.02	1	TOP SLAB	7.53	
		SNAGRIS2	22.000		1.88	41.28	1.40	2.47	1	BOTTOM SLAB	8.02	1.88	1	BOTTOM SLAB	7.79	
		SNCOTTS3	27.250		1.36	37.12	1.40	1.89	1	BOTTOM SLAB	8.02	1.36	1	TOP SLAB	7.53	
		SNAGGRS4	34.925		1.50	52.54	1.40	1.92	1	BOTTOM SLAB	8.02	1.50	1	BOTTOM SLAB	7.79	
		SNS5A	35.550		1.32	47.06	1.40	1.82	1	BOTTOM SLAB	8.02	1.32	1	BOTTOM SLAB	7.79	
		SNS6A	39.950		1.27	50.72	1.40	1.69	1	BOTTOM SLAB	8.02	1.27	1	BOTTOM SLAB	7.79	
	SNS7B	42.000		1.29	54.33	1.40	1.69	1	BOTTOM SLAB	8.02	1.29	1	BOTTOM SLAB	7.79		
	TRUCK TRACTOR SEMI-TRAILER (TTST)	TNAGRIT3	33.000		1.87	61.59	1.40	2.48	1	BOTTOM SLAB	8.02	1.87	1	BOTTOM SLAB	7.79	
		TNT4A	33.075		1.52	50.20	1.40	1.93	1	BOTTOM SLAB	8.02	1.52	1	BOTTOM SLAB	7.79	
		TNT6A	41.600		1.57	65.17	1.40	1.98	1	BOTTOM SLAB	8.02	1.57	1	BOTTOM SLAB	7.79	
		TNT7A	42.000		1.55	64.90	1.40	2.09	1	BOTTOM SLAB	8.02	1.55	1	BOTTOM SLAB	7.79	
		TNT7B	42.000		1.40	58.79	1.40	1.80	1	BOTTOM SLAB	8.02	1.40	1	BOTTOM SLAB	7.79	
		TNAGRIT4	43.000		1.26	54.39	1.40	1.64	1	BOTTOM SLAB	8.02	1.26	1	BOTTOM SLAB	7.79	
TNAGT5A		45.000		1.28	57.78	1.40	1.66	1	BOTTOM SLAB	8.02	1.28	1	BOTTOM SLAB	7.79		
TNAGT5B	45.000		③	1.25	56.29	1.40	1.67	1	BOTTOM SLAB	8.02	1.25	1	BOTTOM SLAB	7.79		

LOAD FACTORS:

DESIGN LOAD RATING FACTORS

LOAD TYPE	MAX FACTOR	MIN FACTOR
DC	1.25	0.90
DW	1.50	0.65
EV	1.30	0.90
EH	1.35	0.90
ES	1.35	0.90
LS	1.75	--
WA	1.00	--

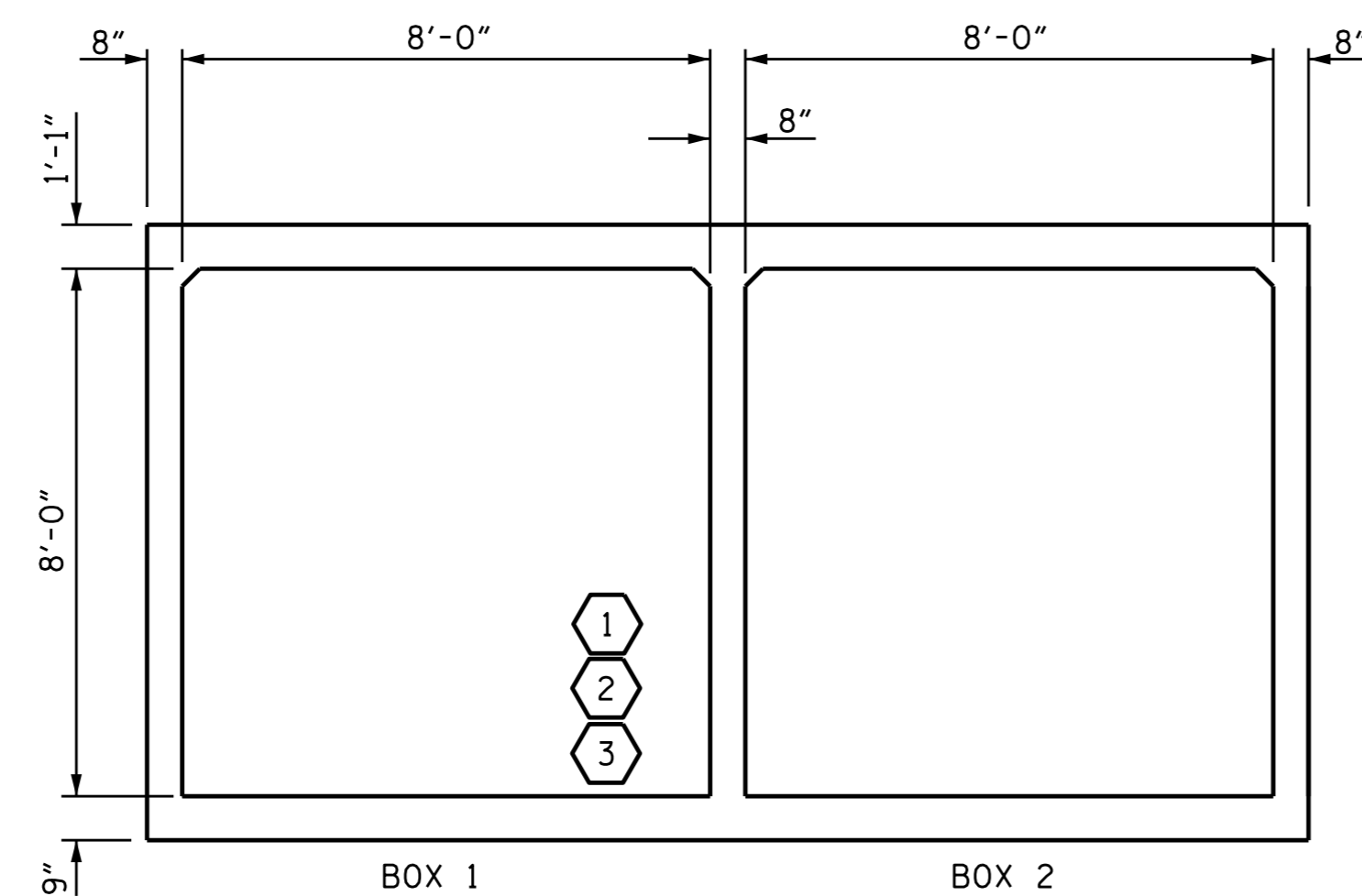
NOTE:

RATING FACTORS ARE BASED ON THE STRENGTH I LIMIT STATE.

COMMENTS:

- 1.
- 2.
- 3.
- 4.

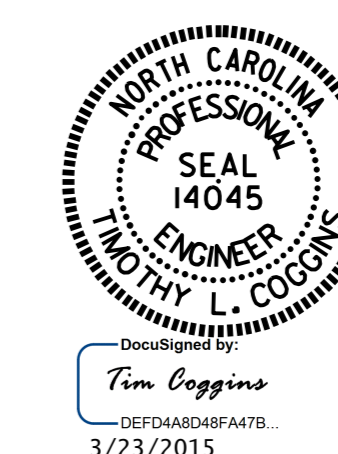
#	CONTROLLING LOAD RATING
①	DESIGN LOAD RATING (HL-93)
②	DESIGN LOAD RATING (HS-20)
③	LEGAL LOAD RATING **
** SEE CHART FOR VEHICLE TYPE	



LRFR SUMMARY
(LOOKING DOWNSTREAM)

PROJECT NO. R-2514D
JONES & CRAVEN COUNTY
 STATION: 20+75.75 -DRV3-

SHEET 2 OF 8



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 LRFR SUMMARY FOR
 REINFORCED CONCRETE
 BOX CULVERTS
 (NON-INTERSTATE TRAFFIC)

REVISIONS						SHEET NO. C19-002
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 8
2			4			

ASSEMBLED BY : M.D. PISO DATE : 01-22-15
 CHECKED BY : N. RUFFIN DATE : 01-22-15
 DRAWN BY : WMC 7/11 REV. 10/1/11 MAA/GM
 CHECKED BY : CM 7/11